

# Renewable Energy for Schools

Tom Lawand (Brace Institute) & Tony Jimenez (NREL)

## School Applications

*School energy needs include:*

*Electricity for lighting, communication, water pumping teaching aides and appliances.*

*Thermal energy for cooking, water heating and space heating*

- Communications - radio-telephone, fax, short-wave radio
- Computer
- Teaching aides - VCR, TV, film projector, slide projector
- Water pumping and water treatment
- Cooking and food preparation
- Refrigeration
- Space heating and cooling
- Water heating
- Washing machine
- Kitchen appliances

## Lessons Learned

*A prerequisite for a technically sound installation is a thorough analysis of a school's energy needs and the energy-system knowledge base of the individuals living in the area.*

*User training and the establishment of a good service infrastructure are equal in importance to a technically sound system installation.*

*Teacher turnover is often high in remote schools. The importance of involvement, input, and training the teachers about the installation of the system will increase the likelihood of success, acceptance, and soundness of the energy system.*

- Undertake a thorough preliminary analysis of a school before installing a system.
- Provide detailed instructive literature to accompany installed equipment.
- Involve the caretaker in all activities concerning the renewable energy system.
- Provide every new teacher with detailed instruction concerning the proper operation and maintenance of their RE system.
- Give every new teacher explicit instructions on what to do in case of a technical difficulty that they are unable to repair themselves.



Boys at play in front of the PV powered Ipolokeng school in South Africa



The interior of a classroom at the Ipolokeng school in South Africa, showing one of the computers that is powered by the PV panels on the roof